Collaborations Through the Pathogen Equivalency Committee Help Establish New and Effective Processes to Disinfect Sewage Sludge

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The Equivalency Recommendation Process

The Issue

- Land application is a popular beneficial use of treated sewage sludge due to its high nutrient and soil conditioning properties.
- · Sewage sludge also may contain pathogenic organisms such as, pathogenic bacteria, viruses, and parasites.
- Before land application, sewage sludge must be properly disinfected to protect public health and the environment.
- Subpart D of the federal 503 regulations sets forth requirements for the disinfection of sewage sludge.
- In Addition to specific approved disinfection methods 40 CFR503D also allows for the use of methods deemed equivalent to those listed.



The PEC works with the applicant to create a strategy for demonstrating PSRP or PFRP equivalency of their process. The applicant must provide a scientifically defendable system evaluation and sampling plan to support equivalency with a statistically significant level of confidence.



U.S. EPA's Office of Science & Technology (OST)

Permitting Authorities (State & Regional **EPA Biosolids Coordinators**)



A proprietor expresses interest in applying for either a PFRP or a PSRP equivalency to a permitting authority or to the PEC directly. PEC is often contacted directly when the proprietor has not yet paired up with a wastewater treatment plant that is operating under permit.

Types of Equivalency under 40CFR503D

Receipt of an OST Recommendation of

National Equivalency frees the proprietor

in the United States as an effective sludge

to market their novel process anywhere

disinfection process that meets federal

regulations while ensuring public safety.

- Process to Further Reduce
- Pathogens (PFRP) Achieves the highest level of disinfection
- One of 6 alternative methods listed to achieve Class A biosolids with respect to pathogens
- Alternative 6 = Use of a Process Equivalent to a PFRP
- 6 PFRPs are recongnized in 503D
- Process to Significantly Reduce Pathogens (PSPR)
- Achieves a satisfactory level of disinfection
- One of 3 alternative methods listed to
- achieve Class B biosolids with respect to pathogens
- Alternative 3 = Use of a Process Equivalent to a PSRP
- 5 PSRPs are recognized in 503D

Pathogen Equivalency Committee (PEC)

Proprietor

- Created in 1985 by U.S. EPA's OST
- Purpose to provide technical assistance to proprietors and permitting authorities on matters regarding PFRP & PSRP equivalency
- Mission ensure that new processes employed for disinfection of land applied sewage sludge are robust and effective in pathogen reduction (PSRP)/elimination (PFRP)
- Current membership of 9 is well rounded and diverse in expertise and point of view

Center

for

Disease

Control &

Prevention

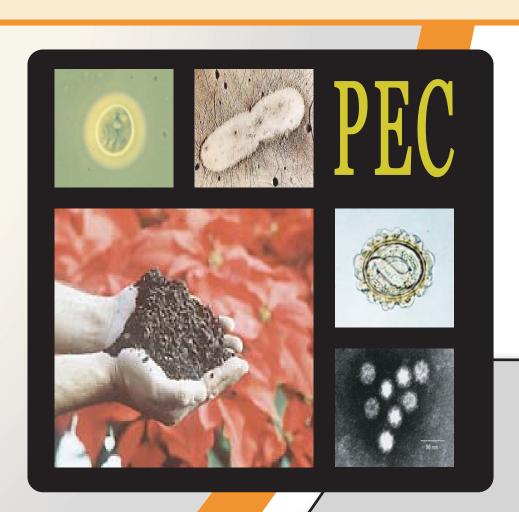
Organizations Represented: U.S. EPA Office of Office Research & of Development Regional Water Offices

Expertise: wastewater engineering, veterinary sciences, sludge regulations, bacteriology, parasitology, virology

The proprietor conducts pilot- or fullscale studies in accordance with the approved plan. The results of the testing are used to build an equivalency application package, including all performance data and operating and maintenance conditions, which is then submitted to the PEC and the state/regional permitting authorities for the sites at which the testing was completed.



The PEC performs a thorough review of the application package for the permitting authority and submits an equivalency recommendation to OST.



Since its creation the PEC has recommended the following processes for national equivalency.



If OST concurs with the PEC's recommendation, it transmits the recommendation to the regions and states.

Types of Equivalency Determinations

- National Equivalency to a PFRP/PSRP
- ②Site-Specific Equivalency to a PFRP/PSRP
- Not Equivalent

 ATP™ Two Stage Sludge Stabilization Autothermal Thermophillic Aerobic Digestion Unique Composting Process

Equivalent Processes

- 2 PSRP Equivalents:
- · Alkaline Addition to Achieve Lime Stabilization OxyOzonation

 Two-Phase Thermo-Meso Feed Sequencing Alkaline Stabilization

- Advanced Alkaline Stabilization w/Subsequent
 - **Accelerated Drying**

Anaerobic Digestion

PFRP Equivalents:

Sludge Drying

- OxyOzonation
- Microbiological Conditioning and Drying **Process**





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